Data Strategy Enterprise-Wide
XML Framework Team
123.1.15 – XML Core Component Dictionaries

Task Order #123

Version 1.0

August 29, 2003

Executive Summary

Business Problem
Over time, the Department of Education's Office of Federal Student Aid (FSA) has developed its Student Financial Aid Process with a number of different operating partners and systems. These operating partners have developed their systems, data models, and data standards independently. The lack of a common set of data definitions and enterprise data standards has hindered FSA from using data in a common way across the enterprise. Furthermore, these different data definitions and standards make it difficult to map and analyze data between FSA's systems. These different data standards become problematic when systems are sharing data; they make it difficult to identify corresponding data between systems.

Solution
The XML Framework takes a first step at establishing enterprise definitions of commonly exchanged FSA data. The Core Components are reusable pieces of business information that are modeled in eXtensible Markup Language (XML) and provide a standard definition for key data entities across FSA's enterprise. These standard definitions will enable FSA to better access and compare data between its systems for mapping and analysis. Additionally, by referencing and exchanging data in a common format, the common set of data definitions and XML modeling will help FSA improve data quality and integration services between systems.

The Core Components approach builds upon FSA's initial work with XML. The Core Components have been developed based on the XML modeling and proven practices from the COD and CPS systems. These Core Components will be used to develop new documents for data exchange between systems (e.g., XML Schemas like the Common Origination and Disbursement [COD] Common Record and the Central Process System [CPS] XML ISIR). Using these standard definitions and proven practices will save development time and improve quality for future message specification development.

As part of the XML Framework, the XML Core Component Dictionaries will:

1. Provide FSA with a refined and standardized set of data standards for creating XML message specifications.
2. Provide FSA with a general set of enterprise data element definitions.
3. Provide FSA with the starting point for common data standards with the Financial Aid Community.
4. Provide FSA with a framework to improve and maintain data quality.

Data Strategies Context
The XML Core Component Dictionaries are the foundation of the XML Framework. These definitions provide a common definition of the key data that is exchanged between FSA's systems and its trading partners. The Core Components, as part of the XML Framework, are

also one of the building blocks of the overall Data Strategies Enterprise-Wide initiative. Specifically, the XML Framework defines a data modeling approach for XML documents. This modeling approach uses standardized enterprise Core Components to model key data entities and concepts that will be leveraged for internal and external data exchange, as defined in the Internal Data Strategy (Del. 123.1.9) and External Information Access (FSA Gateway) Strategy (Del. 123.1.11).

By developing common data definitions for key business data that is exchanged within FSA's Student Aid Lifecycle, the Data Strategies Enterprise-wide team will build the foundation for FSA's To-Be Data Vision. Specifically, the Core Components provide a set of components that, as they are implemented in interfaces over time, will minimize the need for data transformation and enable FSA to move to providing business services (i.e., Web Services). The common definitions for internal and external data entities will also help reduce data errors and redundancy and provide the foundation for FSA to move towards a centralized data store. The Core Components will also enable FSA's longer term Quality Assurance Strategy by providing common definitions that systems will be able to map to and the framework for data reconciliation efforts to identify data discrepancies between systems.

Approach
The initial set of XML Core Components have been developed based on the key FSA business entities identified by the Data Strategies Framework Team in the As-Is System Data Flows (Del. 123.1.2). The high-level entities have been refined using system interface definitions and file layouts from the systems that comprise the Student Aid Lifecycle.

The XML Core Components will work in conjunction with the XML Technical Reference and Usage Guidelines (Del. 123.1.14) and the XML Registry and Repository (Del. 123.1.16) to provide FSA with a comprehensive approach to creating XML message specifications and accessing and managing the data definitions.

Amendment History

DATE	SECTION/ PAGE	DESCRIPTION	REQUESTED BY	MADE BY
08/29/03	All	Document submitted for FSA-wide review.	N/A	H. Sibunruang

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1   Introduction

1.1   Overview

The XML Core Components Dictionaries, as part of the XML Framework, is a cornerstone of the overall Data Strategies Enterprise-Wide Initiative. Over time, the Department of Education's Office of Federal Student Aid (FSA) has developed its Student Financial Aid Process with a number of different operating partners and systems. Each of these operating partners has developed their systems independently resulting in a different set of data models, data standards, and data definitions across FSA systems. These different data definitions have made it difficult for FSA to map and analyze data across the FSA enterprise and to identify and share corresponding data between FSA systems.

The XML Core Components Dictionaries takes an initial step at establishing enterprise definitions of key data that is exchanged between FSA's systems and its trading partners. Developed in accordance with industry standard methodologies, languages, and tools, the Core Components capture a refined set of reusable pieces of business information that are modeled in eXtensible Markup Language (XML) and provide standard definitions for key data entities across FSA's enterprise.

Specifically, the XML Core Component Dictionaries will:

1. Provide FSA with a refined and standardized set of data standards for creating XML message specifications.
2. Provide FSA with a general set of enterprise data element definitions.
3. Provide FSA with the starting point for common data standards with the Financial Aid Community.
4. Provide FSA with a framework to improve and maintain data quality.

In the context of the overall Data Strategy Enterprise-Wide Initiative, the Core Components will help FSA improve data quality and integration services between systems by providing a framework that FSA will be able to leverage as part of future Data Reconciliation efforts.

1.2   Business Objectives

The XML Core Component Dictionaries is one of the building blocks that will enable the XML Framework to meet the following high-level business objectives (as identified in the XML Framework Strategic Assessment and Enterprise Vision [Del. 123.1.13]):

- Define and utilize a standards-based approach to XML development.
- Provide timely communication to FSA's business partners (e.g., Schools, Guaranty Agencies, Third-Party Servicers, Software Providers, etc.) regarding XML implementation and changes.
- Establish a governance process for XML development within FSA.
- Align FSA's XML strategy with Government-wide XML direction and initiatives.

- Align with Postsecondary Education Financial Aid community to aid in the development of a community-wide data exchange standard.

1.3   Scope

The XML Core Component Dictionaries provides FSA with:

1. An overview of the approach for developing Core Components. Specifically, the document describes FSA's Core Component Five Layer Model and its constituent layers which provide a standard framework for creating XML message specifications
2. The initial set of Core Components Definitions.
3. The proposed usage and implementations of the Core Components framework in the following two areas:

     o   XML Vocabulary
     o   Data Reconciliation

1.4   Organization of the Document

The XML Framework Core Component Approach document consists of the following sections:

- Section 1: Introduction provides the high-level overview, scope, business objectives, and assumptions for the XML Framework Core Component Dictionaries.
- Section 2: Functional Description provides an overview of the XML Core Component approach divided into the following main areas:
     o   Core Component Overview
     o   The Core Component Five Layer Model
     o   Core Components Usage and Implementations
- Section 3: Detailed Description follows the same structure as the functional description, while providing a greater level of detail on the main subject areas.
- Appendix A: References provides a list of the documents and technical specifications that were referenced to develop the FSA Core Components and methodology.
- Appendix B: Core Component Modeling Approach provides an overview of the approach for modeling the Core Components.
- Appendix C: Core Component Glossary of Terms provides definitions of the metadata included in the Core Component Dictionary.
- Appendix D: Core Component Definitions provides an initial set of XML-schema defined data entities, standardized across the FSA enterprise.
- Appendix E: FSA Core Component Dictionary provides the comprehensive list of Core Components, their associated metadata, and XML definitions.
- Appendix F: Core Component Source Documentation Traceability Matrix provides information on the system level interface documentation that was used to research the initial set of the Core Components.

1.5   Assumptions

- The XML Core Component Dictionaries (Deliverable 123.1.15) defines FSA's initial set of Core Components. These Components may undergo revisions as they continue to be reviewed by the XML Framework team and designated FSA reviewers, through their production release on October 31, 2003.   The final reference set of Core Components will be accessible through the XML Registry and Repository (Deliverable 123.1.16) that is scheduled for delivery on October 31, 2003.

- The FSA Core Components are based on the Electronic Business using the eXtensible Markup Language (ebXML) guidelines, as well as the Universal Business Language (UBL) guidelines from the Organization for the Advancement of Structured Information Standards (OASIS). As these standards are still being refined, updates and recommendations from the ebXML and UBL working groups should be reviewed and considered for incorporation into FSA's Core Components approach.

- The initial set of Core Components will be used for defining the exchange of enterprise data. As specific interfaces are designed and developed, the need to modify the Core Components, create new Core Components, or model application specific data may arise.

- Core Components are defined as a reference for creating message exchange specifications. The Core Components will not require systems to modify their databases in order to match the Core Component definitions. Rather, the systems can use these definitions for mapping their data as it is currently stored in databases to files that are used for exchanging data between systems.

- The Core Components Approach is one piece of FSA's overall XML Framework. The XML Framework Strategic Assessment and Enterprise Vision (Del. 123.1.13) describes the overall XML framework and the corresponding areas.

- The Core Components Approach provides a framework for developing components of XML message specifications. The XML Technical Reference and Usage Guidelines (Del. 123.1.14) will provide more detailed information on how to assemble the Core Components into an XML message specification.

- FSA and the Postsecondary Education Financial Aid Community will revise existing XML message specifications and develop new XML message specifications in accordance with the Core Component Approach, as feasible within existing projects' development cycles.

2   Functional Description

2.1   Functional Description Overview

The functional description section provides a high-level overview of FSA's Core Components Approach. Specifically, the section includes information on the following areas:

- Core Component Overview
- Core Component Five Layer Model
- Core Component Usage and Implementations

2.2   Core Component Overview

FSA's Core Component Dictionaries have been developed in accordance with industry-standard methodologies, languages, and tools to systematically capture and present a refined, consistent set of data definitions for FSA and the Postsecondary Education Financial Aid Community.

The FSA Core Components are based on the Electronic Business using the eXtensible Markup Language (ebXML) guidelines, as well as the Universal Business Language (UBL) guidelines from the Organization for the Advancement of Structured Information Standards (OASIS).

The initial set of FSA Core Components consists of the key data entities that are exchanged across the FSA enterprise. These Core Components have been developed based on the key FSA business entities identified by the Data Strategies Enterprise-Wide Framework Team in the As-Is System Data Flows (Del. 123.1.2). Specifically, the Core Components provide data element coverage across the following four high-level Business Entities defined in the As-Is System Data Flows:

- Person
- Aid
- School
- Financial Partner

The high-level entities have been refined using system interface definitions and file layouts from the systems that comprise the Student Aid lifecycle. Refer to Section 3: Detailed Description and Appendix F: Core Component Source Documentation Traceability Matrix for more detail on the interface source information.

2.3   Core Component Five Layer Model

The Core Component Five Layer Model provides a framework for creating message specifications from a centralized set of standard data definitions. The model is composed of five layers that are organized, from bottom to top, by the level of aggregation for each object.

That is, the bottom level, Level 1, is the most basic, and the top level, Level 5, is the most complex. Each level builds on the level beneath it.

The FSA Core Component Dictionaries covers Levels 1 and 2 of the Five Layer Model. Documentation for XML design work at Levels 3 through 5 will be contained in the XML Technical Reference and Usage Guidelines (Del. 123.1.14). All five layers work together to provide a complete set of standards for XML message assembly.

The following table is organized from generic to specific example in order to illustrate the XML Framework Core Component Five Layer Model. The table is described in detail in the following sections.
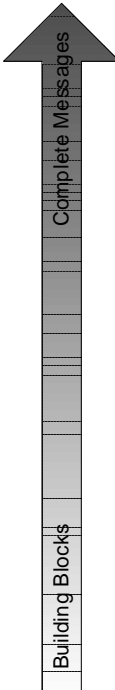
#	Foundation Objects	Implementation Objects	Examples
5	N/A	Message Specification	COD Common Record Schema
4	N/A	Sector Library	Origination and Disbursement Demographics Sector Library
3	N/A	Block	Student's Contacts Block
2	Aggregate Core Component	Aggregate Business Information Entity	Student's Permanent Address *(Core Component: Address)*
1	Basic Core Component	Basic Business Information Entity	Student's Email Address *(Core Component: Email Address)*

Table 1 - FSA's Core Component Five Layer Model

The Core Component Five Layer Model illustrates the way XML objects are defined and assembled into a Message Specification. The table is organized into the following three categories:

- Foundation Objects
- Implementation Objects
- Examples

2.3.1   Foundation Objects

Foundation objects consist of the Core Components, both Basic and Aggregate, which are the most basic data definitions in the model. They are called foundation objects because the Core Components are not actually included in the assembly of a Message Specification, but are used when constructing the objects that will be included. Core Components provide the first step in ensuring consistency across FSA's Message Specifications, because using Core Components will enable consistency across the lowest levels of document construction.

2.3.2   Implementation Objects

Implementation Objects consist of:

- Business Information Entities
- Blocks
- Sector Libraries
- Message Specifications

These implementation objects are the actual XML Schema constructs that are assembled together to form the final product, Message Specifications. They are the templates that are used, and the rules that are referenced during the assembly process. They provide the second step in ensuring consistency across Message Specifications, because their use ensures consistency across the higher levels of document construction.

2.3.3   Examples

In the Core Component Five Layer Model, the example objects serve to illustrate each of the layers in the model. The address example from the COD Common Record Schema illustrates the physical implementations of each of the concepts described in the model.

2.4   Core Components Usage and Implementations

The Core Components will be used for the following two primary initiatives by FSA:

- XML Vocabulary
- Data Reconciliation

2.4.1   XML Vocabulary

The Core Component definitions will define the basic building blocks of an XML vocabulary that can be used across FSA and the Postsecondary Education Financial Aid Community for data exchange. By defining key concepts in the Core Components, FSA and the Postsecondary Education Financial Aid Community are developing industry standards that can be used for information exchange.

2.4.2   Data Reconciliation

In addition to providing common mapping definitions for data entities across systems, the Core Components will provide the framework for future data reconciliation work that FSA will perform. By modeling the Core Components in XML, FSA will be able to leverage the Core Components as part of future data reconciliation efforts.

3   Detailed Description

3.1   Detailed Description Section Overview

The detailed description section provides an in depth description of the FSA Core Components Approach. Specifically, the section includes detailed information on the following Core Component areas:

- Core Component Overview
- Core Component Five Layer Model
- Core Components Usage and Implementations

3.2   Core Component Overview

The Core Components Approach is based on the following leading standards and recommendations for XML development:

Organization	Standard	Description
UN/CEFACT (United Nations Center for Trade Facilitation and Electronic Business) OASIS	ebXML Framework	The ebXML Framework is a set of standards and specifications that allows enterprises dispersed all over the world to conduct business with each other. OASIS hosts the standardization efforts for ebXML Registry, Messaging, Collaborative Partner and Implementation, while UN/CEFACT is responsible for developments in Business Process and Core Component work.
OASIS	Universal Business Language (UBL)	The Universal Business Language is a standard library of XML documents (purchase orders, invoices, etc.) created by modifying an existing library of XML schemas and incorporating their best features. UBL is intended to become an international standard for electronic commerce freely available to everyone without licensing or other fees.
ASC X12C (Accredited Standards Committee X12C) Communications and Controls Sub-committee	ASC X12 Reference Model for XML Design	The ASC X12 Reference Model for XML Design provides guidelines for writing e-business messages and offers design principles for organizing business data into modularly flexible messages using XML. The reference model is built on ebXML's Core Component specifications.

Organization	Standard	Description
International Organization for Standardization (ISO) International Electrotechnical Commission (IEC)	ISO/IEC 11179 Part 5, "Naming and Identification Principles for Data Elements"	This document provides the basis for the naming rules used in ebXML and UBL Core Component Specifications. It provides guidelines for structured naming conventions for data elements.
The Open Applications Group (OAG)	Open Applications Group Integration Specification (OAGIS)	The OAGIS is an effort to provide a canonical business language for information integration. Based on ebXML's Core Component specifications, it uses XML as the common alphabet for defining business messages, and for identifying business processes (scenarios) that allow businesses and applications to communicate.

Table 2 - XML Leading Standards

Specifically, the following documents served as the primary references for developing FSA's Core Component methodology, and as the representative examples studied for the FSA Core Component analysis:

- ebXML Core Components Technical Specification v1.90 (UN/CEFACT and OASIS)
- Core Components User's Guide 16 June 2003 (UN/CEFACT)
- UBL 0pt70 review release (UBL / OASIS)
- UBL Library Release (includes BIE spreadsheets and sample schemas) (UBL / OASIS)
- UBL White paper on Naming and Design Rules (UBL / OASIS)
- ebXML Registry Information Model v2.5 (OASIS)
- ebXML Registry Services Specification v2.5 (OASIS)

Refer to Appendix B: Core Component Modeling Approach for a detailed description of how the standards listed above were leveraged to develop FSA's methodology for identifying and modeling Core Components.

The Core Components were researched to provide data element coverage across the following four high-level Business Entities defined in the As-Is System Data Flows (Del. 123.1.2):

- Person – demographic, financial, and other data related to students, borrowers, and parents
- Aid – FSA award programs, including Direct Loan, Pell, and Campus Based
- School – institutional demographic and participation information
- Financial Partner – institutional demographic and participation information

Specifically, the Core Components have been defined based on interface definitions from the following systems:

- COD
- CPS/ISIR
- DLCS
- DLSS
- eCB
- FMS
- GAPS
- LARS
- NSLDS
- PEPS

Refer to Appendix F: Core Component Source Documentation Traceability Matrix for detailed information on the documentation referenced. This matrix tracks the system level interface documentation that was used to define the initial Core Components.

3.2.1   Major Components

The Core Component Approach is at the foundation of the XML Framework. It consists of the following major components:

- Core Component Dictionaries
- XML Technical Reference and Usage Guidelines
- XML Registry and Repository

3.2.1.1   *Core Component Dictionaries*

The XML Core Component Dictionaries (Deliverable 123.1.15) provide an enterprise definition of terms. These Core Components can be used as the starting point for addressing Data Quality issues identified in the Mad Dog Data Quality task. The Core Components will enable FSA to compare data between systems by mapping the data to the Core Component definitions. During the data reconciliation process, discrepancies will be identified, reviewed by FSA, and corrected (as necessary).

The FSA Core Components are defined in Appendix D: Core Component Dictionary – Summary and Appendix E: FSA Core Component Dictionary – Detail.

3.2.1.2   *XML Technical Reference and Usage Guidelines*

The XML Technical Reference and Usage Guidelines (Deliverable 123.1.14) will contain information on how to use the Core Components to create new schemas and also define XML design patterns for developing and implementing XML schemas.

3.2.1.3 *XML Registry and Repository*

The XML Registry and Repository (Deliverable 123.1.16) will provide the ability to store, version, search, and retrieve the Core Component Library. It will serve as the standard repository of this information, across the FSA enterprise.

A major hindrance in many data definition efforts is that the current version of the official documentation and definitions is very hard to track down. Making the dictionary of components accessible is an important component of establishing an enterprise dictionary, so that its contents are easy for everyone to review and use.

3.3 *Core Component Five Layer Model*

This section provides a more detailed description of the Core Component Five Layer Model and its constituent parts. The Five Layer Model table is included again for reference.
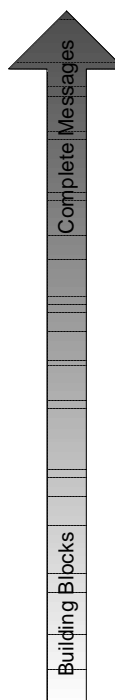
#	Foundation Objects	Implementation Objects	Examples
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1	Basic Core Component	Basic Business Information Entity	Student's Email Address *(Core Component: Email Address)*

(left margin: arrow labeled "Complete Messages" pointing up, "Building Blocks" at bottom)

Table 3 - FSA's Core Component Five Layer Model

The following sections provide detailed descriptions and examples of the terms used in the model.

3.3.1   Foundation Objects

3.3.1.1   *Basic Core Component (BCC)*

Core Components can be defined as the standardized data elements used for constructing electronic business documents transferred between systems. A Basic Core Component is a specific data field that appears in different circumstances of business information and in different areas of business. It is a common or "general" building block that is context free and that can be used across several business sectors.

An example of a BCC would be an Email Address.

3.3.1.2   *Aggregate Core Component (ACC)*

An Aggregate Core Component is similar to a Basic Core Component, but instead of representing a single data field, it covers a "building block" that contains several pieces of business information. These pieces of information are tightly coupled, so that they cover only a single concept.

An example of an ACC would be an Address, which includes the Address Line, City, Street, State, and Postal Code elements.

3.3.2   Implementation Objects

3.3.2.1   *Basic Business Information Entity (BBIE)*

A Basic Business Information Entity is essentially a Basic Core Component that is being used in a particular business context. A BBIE should always have a BCC as its base representation. The BBIE can look exactly the same as a BCC, or it can be slightly modified (within strict parameters) to reflect its context.

An example of a BBIE would be a Student's Permanent Address Postal Code. Note that a BBIE is defined by taking a BCC (e.g., a plain Postal Code) and giving it business context. In this way, the Postal Code BCC can be re-used in different business contexts, such as for a Student's Temporary Address Postal Code, or a Lender's Address Postal Code.

3.3.2.2   *Aggregate Business Information Entity (ABIE)*

An Aggregate Business Information Entity is essentially an Aggregate Core Component that is being used in a particular business context. An ABIE should always have an ACC as its base representation. The ABIE can look exactly the same as an ACC, or it can be slightly modified (within strict parameters) to reflect its context.

An example of an ABIE would be a Student's Permanent Address. Note that an ABIE is defined by taking a BCC (e.g., a plain Address) and giving it business context. In this way, the Address

BCC can be re-used in different business contexts, such as for a Student's Temporary Address or a Lender's Address.

3.3.2.3   *Block*

A Block is an assembly of BBIEs, ABIEs, and even other Blocks (as necessary) to form a logical grouping of concepts. The items in a Block are not as tightly coupled as those in an ABIE. That is, they are not part of a group by definition, like an Address, but grouped more by association, like components of a Contacts Block.

An example of a Block would be Contacts. This block can hold various BBIEs and ABIEs, such as:

- Student's Permanent Address
- Student's Permanent Address Postal Code
- Student's Permanent Phone Number

3.3.2.4   *Sector Library*

A Sector Library is a logical grouping of XML specified entities into a library file. Physically, a Sector Library would be the XML Schema file that defines the BBIEs, ABIEs, and Blocks to be used in that sector. These Library files form the basis for construction of the layer above, the Message Specification.

An example of a Sector Library is the physical XML Schema file that holds the various XML Schema definitions for originations and disbursements in COD related processing, with a name such as OrginationAndDisbursementSector.xsd.

Each business area, or Sector, can use their locally defined library files for storing and maintaining XML schema entity definitions specific to that Sector. In this way, Sectors do not have to be limited to using XML entities defined only at the Core Component level, in case they need data elements that have not yet been defined in a Core Component library.

Periodically, data elements existing in Sector Libraries should be analyzed for inclusion in the Core Component level once there is agreement on an enterprise-wide definition for each candidate element. In this way, the Core Component layer is kept updated with new data elements suitable for enterprise use.

The XML Registry and Repository (Del. 123.1.16) provides a Classification Scheme capability that will be used to properly categorize repository items into appropriate Sector Libraries. The formal Sector Library Classification Scheme will be defined in the XML Technical Reference and Usage Guidelines (Del. 123.1.14) and implemented in the Registry and Repository.

3.3.2.5   *Message Specification*

The message specification defines the layout for the XML data exchange between two or more systems. Message specifications will generally consist of the smaller building blocks. The Message Specification indicates how the smaller building blocks should be assembled into a particular message to meet the requirements of a specific communication of information between systems, during a business process. The building blocks should be assembled to support the message semantics for that exchange. For example, in COD, a Student holds an Award, which in turn holds disbursements, which is reflected in the hierarchy of those XML constructs for the CommonRecord:COD message. Standards for block assembly will be provided in the XML Technical Reference and Usage Guidelines (Del. 123.1.14).

Physically, a message specification exists as an XML Schema file. It should only define a few large aggregate constructs, which reference the BBIEs, ABIEs, and Blocks that are defined in the Sector Library for that Sector. For example, the COD CommonRecord message specification will include a Reporting School entity, containing one or more Attended School entities, which in turn contains one or more Students entities. No new or unique data entities should be introduced in the Message Specification; all data entities used here should have already been defined at the Core Component or Sector Library levels.

3.3.3   Example

The following diagram traces the use of a representative data entity, Address, through the levels of the XML modeling architecture, from its definition as a Core Component (bottom level), through its refinement (through the addition of context) into a Business Information Entity, to its ultimate inclusion in a Schema as part of a Contacts Block.

The diagram also shows the Libraries where the structures will exist: the Core Component Libraries, the Sector Libraries, to the Message Specification Schemas.
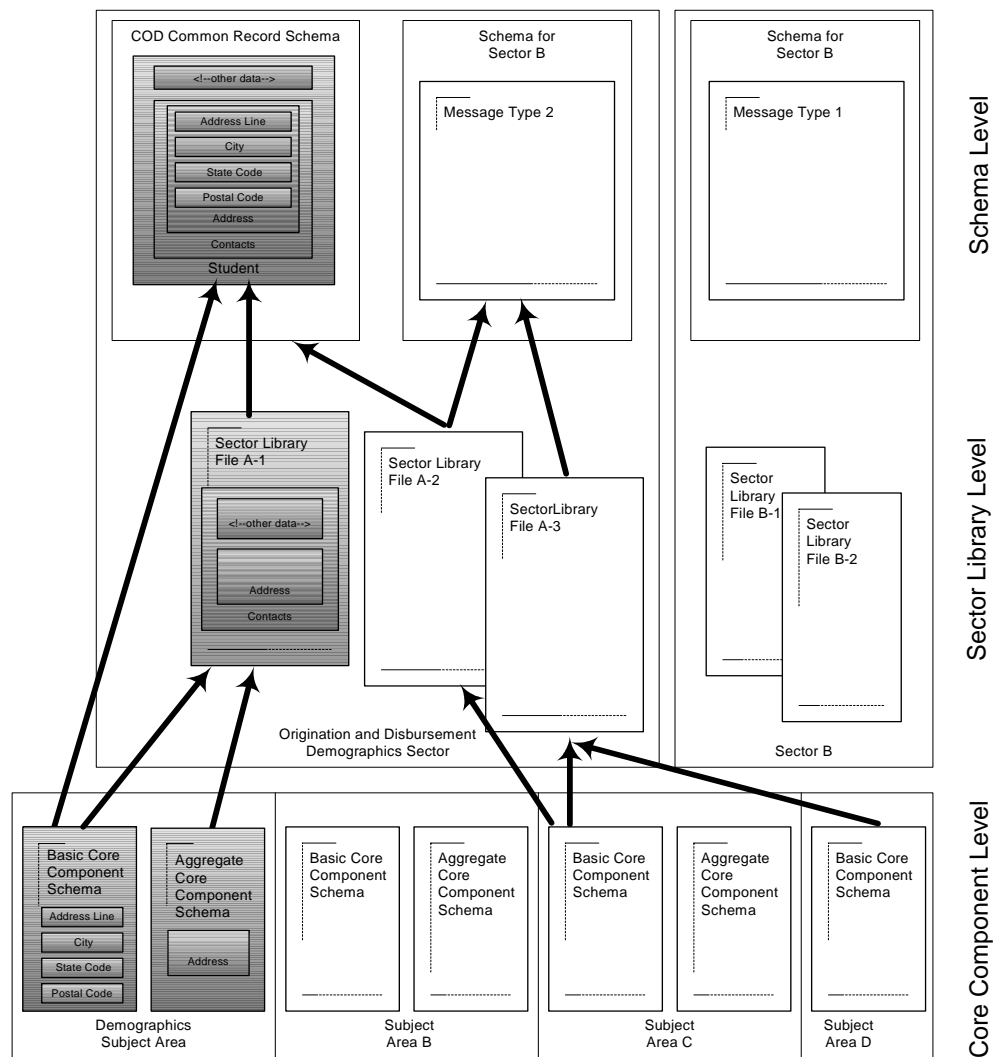
Figure 1 - COD Address Line Core Component Example

3.4   *Core Components Usage and Implementations*

The Core Components will be used for the following two primary initiatives by FSA:

- XML Vocabulary
- Data Reconciliation

3.4.1   XML Vocabulary

An XML Vocabulary consists of the basic set of data elements, described in XML, that are needed to conduct transactions across a certain business domain. Each element as defined should have a unique name, along with a clear definition that indicates its meaning and

possible uses. The vocabulary should also show, on a basic level, how the elements work together to construct meaningful messages.

The Core Component definitions will define the basic building blocks that can be used across the Postsecondary Education Financial Aid Community. By defining key concepts in the Core Components, FSA and the Postsecondary Education Financial Aid Community are developing industry standards that can be used for information exchange.

3.4.2   Data Reconciliation

In addition to providing common mapping definitions for data entities across systems, the Core Components will provide the framework for future data reconciliation work that FSA will perform. By modeling the Core Components in XML, FSA will be able to leverage the Core Components as part of future Data Reconciliation efforts.

As envisioned as part of future Data Reconciliation efforts, the Core Components can be used to map data entities from different systems to common Core Components. These mappings can then be used by data reconciliation and clean up tools to identify data discrepancies between the systems.

The Core Components have been be modeled so they can be used as inputs to tools that can assemble database-independent representations of data across systems. These tools generally use some combination of UML models and XML Schema definitions. The selection of a Data Reconciliation tool is not in the scope of the XML Framework's activities. However, it is clear from the current marketplace offerings, that in some manner, the Core Components will provide the mechanism for FSA to map data between systems and identify and correct data discrepancies.

Appendix A: References

Refer to the Appendix_A_References.doc file.

Appendix B: Core Component Modeling Approach

Refer to the Appendix_B_Core_Component_Modeling_Approach.doc file.

Appendix C: Core Component Glossary of Terms

Refer to the Appendix_C_Core_Component_Glossary_of_Terms.doc file.

Appendix D: Core Component Dictionary – Summary

Refer to the Appendix_D_Core_Component_Dictionary_Summary.rtf file.

Appendix E: Core Component Dictionary – Detail

Refer to the Appendix_E_FSA_Basic_Core_Component_Dictionary_Detail.rtf and
Appendix_E_FSA_Aggregate_Core_Component_Dictonary_Detail.rtf files.

Appendix F: Core Component Source Documentation Traceability Matrix

Refer to the Appendix_F_Core Component Source Documentation Traceability Matrix.doc file.